

7.0 REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) are site-specific goals based on acceptable exposure levels that are protective of human health and the environment. RAOs combine consideration of applicable or relevant and appropriate requirements (ARARs) and the specific constituents, affected media, and potential exposure pathways of the site. RAOs identify risk pathways that remedial actions should address and identify acceptable exposure levels for residual COCs.

The RI data indicated that groundwater is not impacted above MTCA cleanup criteria at the Moses Lake Maintenance Facility Site with the exception of the limited area near MW-11, where petroleum product was discovered in the well. Impacts to soils at the Site have been identified in the RI, based upon regulatory or screening levels. Adverse impacts attributable to the contamination at the Moses Lake Maintenance Facility include:

- Contamination of soils from historical operations and USTs previously located on Site that released petroleum hydrocarbons; and
- Potential contamination of groundwater by migration of constituents from contaminated soils; and the potential for petroleum impacts to groundwater at MW-11 to migrate off-site.

Considering the information collected in the RI, the potential risk of identified COCs, and potential migration pathways of materials disposed at the site, the remedial action objectives for this site are:

- Reduce the potential for exposure of human or ecological receptors to petroleum products at the Site via direct contact with contaminated soils or exposure to potentially hazardous constituents in groundwater;
- Reduce the potential for migration of petroleum from soil to groundwater, and
- Remove the potential for free petroleum product identified in MW-11 from migrating off site.

Remedial actions should be consistent with potential future land uses.

7.1 Cleanup Goals

Cleanup goals are numeric expressions of RAOs. A remediation goal is the maximum acceptable concentration of a COC to which the human or ecological receptors would be exposed via a specified exposure route (e.g., direct contact) under a specified exposure scenario (e.g., industrial land use). Cleanup goals are generally established for COCs as the lower of a numeric chemical-specific ARAR or a risk-based cleanup concentration. That is the cleanup levels at the lowest concentrations of cleanup criteria for protection of human health and ecological protection. Cleanup goals are presented as preliminary in the FS because the final remediation goals, or cleanup levels, are set in the Cleanup Action Plan (CAP).

The general framework that would be used to determine cleanup goals for any identified COC can be established according to MTCA acceptable exposure levels for carcinogens and non-carcinogens guidelines. Under MTCA, acceptable exposure levels for carcinogens are concentration levels that represent potential lifetime incremental cancer risk to an individual of 10^{-6} for individual constituents in a residential exposure scenario, 10^{-5} for individual constituents in an industrial exposure scenario,

and 10^{-5} for combined constituent risks in both scenarios. For non-carcinogens, acceptable exposures levels are concentrations or multiple constituents that correspond to a hazard index less than 1.0.

Cleanup goals for remedial action involving soil are set at the appropriate MTCA Method A or Method B concentrations of ecological concern criteria for Site COCs. Similarly the cleanup goals for groundwater at MW-11 will be set as the appropriate MTCA Method A for Site COCs. Also, no ambient air quality standards are applicable to the site because it was not identified as an adverse impact attributable to the contamination at the site. Therefore, it is neither necessary nor appropriate to set remediation goals or cleanup standards for ambient air quality at the Site.

Table 7-1 presents the list of cleanup goals for the Moses Lake Maintenance Facility that is protective of human health and the environment. These cleanup goals are established for the list of analytes found to exceed their respective MTCA Method A or Method B cleanup criteria or terrestrial ecological evaluation concern criteria and are protective by multiple pathways and for multiple hazardous substances according to WAC 173-340-708 (5).

The following three sections comprise the feasibility study for the Moses Lake Maintenance Facility Site. The first (Section 8.0) identifies and screens remediation technologies; the second (Section 9.0) develops a list of remediation alternatives; and the third (Section 10.0) provides a detailed evaluation of alternatives and the selection of a remediation alternative for the Moses Lake Maintenance Facility.